



Attorney Docket No. 0675-30

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:	)	Group Art Unit: 2832
Tsuneo KYOUNO et al.	)	Examiner: L. Donovan
Serial No. 09/601,319	)	<u>CERTIFICATE OF MAILING</u>
Filed: October 23, 2000	)	I hereby certify that this correspondence is being
For: ELECTROMAGNETIC ACTUATOR	)	deposited with the United States Postal Service
AND STRUCTURE FOR MOUNTING	)	with sufficient postage as First Class Mail in an
THE SAME	)	envelope addressed to: Commissioner for Patents,
	)	P.O. Box 1450, Alexandria, VA 22313-1450, on
	)	<u>2-19-2004</u>
	)	<u>Adele M. Stampler</u>

RESPONSE

Honorable Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The Official Action mailed August 19, 2003, has been received and its contents carefully noted. Filed concurrently herewith is a *Request for Three Month Extension of Time*, which extends the shortened statutory period for response to February 19, 2004. Accordingly, the Applicants respectfully submit that this response is being timely filed.

The Applicants note with appreciation the consideration of the Information Disclosure Statement filed on February 6, 2001. However, the Applicants have not received acknowledgment of the Information Disclosure Statement filed on November 15, 2002. The Applicants respectfully request that the Examiner provide an initialed copy of the Form PTO-1449 evidencing consideration of the above-referenced Information Disclosure Statement.

Claims 1, 2 and 4-14 are pending in the present application. Claims 2, 4, 5, 8 and 10-13 are independent, and claims 4-7 and 11-14 have been withdrawn from consideration. Accordingly, claims 1, 2 and 8-10 are currently elected, of which claims 1, 8 and 10 are independent. The Applicants note with appreciation the allowance of claims 8-10 (Office Action Summary and page 4, Paper No. 21, "Allowable Subject

Matter"). For the reasons set forth in detail below, all claims are believed to be in condition for allowance. Favorable reconsideration is requested.

Paragraph 2 of the Official Action rejects claims 1 and 2 as obvious based on the combination of U.S. Patent No. 5,528,697 to Saito, U.S. Patent No. 5,894,263 to Shimakawa et al., and U.S. Patent No. 5,546,469 to Donahoe. It appears that the Official Action has inadvertently indicated that claims 8-10 remain rejected (page 2, Id.); however, the previous rejection against claims 8-10 (Paper No. 18) has been deleted from the Official Action. Therefore, the Applicants respectfully submit that claims 1 and 2 stand rejected and that claims 8-10 are in condition for allowance. The Applicants respectfully traverse the rejection because the Official Action has not made a *prima facie* case of obviousness.

As stated in MPEP §§ 2142-2143.01, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

The prior art, either alone or in combination, does not teach or suggest all the features of the independent claims. Independent claim 1 recites an electromagnetic actuator having a coil on which current is applied, a magnet (e.g. 20) that forms a magnetic circuit (e.g. Exhibit 4 below) between its poles across a magnetic gap with a magnet yoke (e.g. 21), a diaphragm that vibrates by magnetic action when a high-frequency current is applied and a vibration plate that vibrates by magnetic action when a low-frequency current is applied, and that the magnet yoke is assembled with a spacer (e.g. 24) between the magnet yoke and the magnet. Saito, Shimakawa and Donahoe, either alone or in combination, do not teach or suggest at least the above-referenced features of the present invention.

The Official Action asserts that Saito teaches "yoke portions [26, 29] defining a gap between poles thereof [figure 5]" and "a radially arranged magnet [28] mounted, and suspended, between the vibration plates having its north and south poles parallel to the vibration plates and diaphragm" (page 2, Paper No. 21). The Official Action concedes that Saito does not disclose "a spacer between the magnet and the yoke" (page 3, Id.). Further, Shimakawa does not appear to teach or suggest a spacer between a magnet yoke and a magnet. The Official Action asserts that Donahoe discloses "a sound transducer including a magnet member [17] spaced from a yoke [61] with a spacer [19]" (page 4, Id.). However, Saito, Shimakawa and Donahoe, either alone or in combination, do not teach or suggest a magnet that forms a magnetic circuit between its poles across a magnetic gap with a magnet yoke, a diaphragm that vibrates by magnetic action when a high-frequency current is applied and a vibration plate that vibrates by magnetic action when a low-frequency current is applied, and that the magnet yoke is assembled with a spacer between the magnet yoke and the magnet.

As described in detail below, adding or incorporating the resilient and highly flexible spacer 19 of Donahoe into the combined device of Saito and Shimakawa would disable the resulting device. In other words, if one were somehow motivated to incorporate the resilient and highly flexible spacer 19 of Donahoe into the combined

device of Saito and Shimakawa, the resulting device would no longer function such that a diaphragm vibrates by magnetic action when a high-frequency current is applied and a vibration plate vibrates by magnetic action when a low-frequency current is applied (hereinafter "high-frequency, low-frequency manner"). A flexible spacer cannot be used in the proposed combined device of Saito and Shimakawa in order to function as noted above, which is claimed by independent claim 1. Therefore, Saito, Shimakawa and Donahoe do not teach or suggest a magnet that forms a magnetic circuit between its poles across a magnetic gap with a magnet yoke, which functions in a high-frequency, low-frequency manner, and that the magnet yoke is assembled with a spacer between the magnet yoke and the magnet.

Specifically, the Applicants note that spacer 19 of Donahoe "is constructed of a material that is both resilient and highly flexible; such as foam rubber or solid elastomeric rubber" (column 2, lines 53-55). The spacer 19 is placed between the magnet 17 and yoke 21, thus the spacer 19 elastically suspends the part that supports the magnet 17 such that vertical vibration of the magnet 17 occurs against the wall 15 (see Exhibit 1 below). As such, Donahoe is not adapted to function in the same high-frequency, low-frequency manner as the present invention.

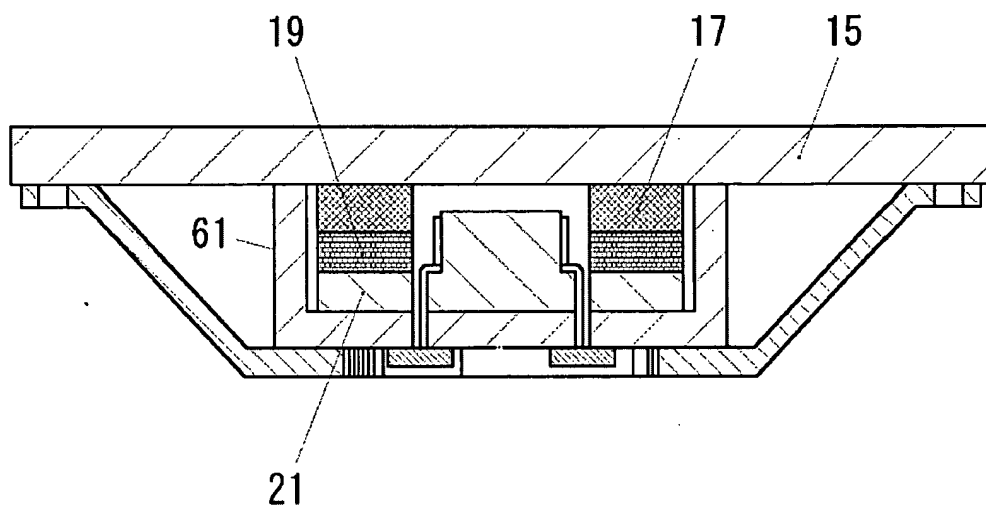


Exhibit 1: FIG. 2 of Donahoe showing wall 15, permanent magnet 17, flexible spacer 19, yoke 21 and frame side 61

On the other hand, spacer 24 of the present invention does not hold a permanent magnet 20 against an object, e.g. a wall. Rather, the spacer 24 of the present invention is adapted to function in the high-frequency, low-frequency manner described above and in independent claim 1. In the present invention, the arrangement of the spacer 24 between a magnet 20 and magnet yoke 21 are to eliminate the possibility that the magnet 20 slips down inside the magnet yoke 21 and in order to form a stable magnetic circuit even if the magnetic circuit (that is made up of magnet yoke 21, magnet 20 and spacer 24) vibrates by magnetic action. Thus, in the present invention, a comparatively hard material may be used. The spacer 24 of the present invention differs from the spacer 19 of Donahoe, because the spacer 24 of the present invention supports the magnet 20 firmly and permits high-frequency, low-frequency operation (see Exhibit 2 below).

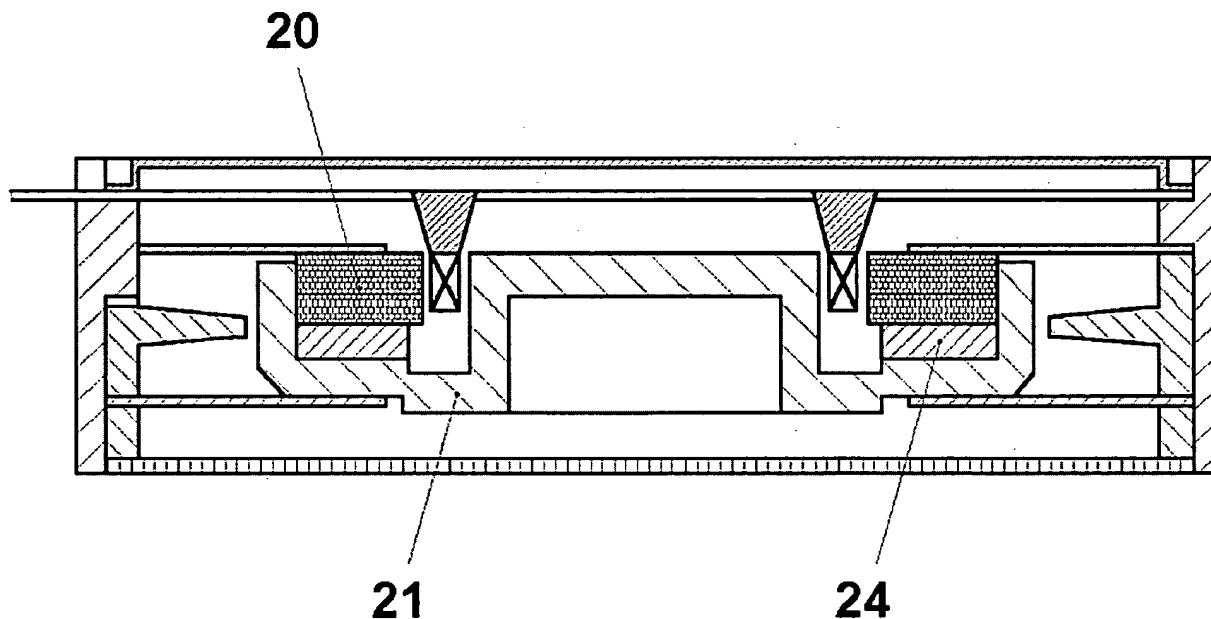


Exhibit 2: FIG. 1 of the Present Invention showing magnet 20, magnet yoke 21, spacer 24

The wall 15 of Donahoe is not necessarily made from magnetic materials; therefore, the magnet 17 is not necessarily enclosed with magnetic materials. It

appears that the magnetic circuit of Donahoe is an open type magnetic circuit. The Applicants respectfully submit that magnetic lines of force that are emitted from the N-pole of the magnet 17 of Donahoe pass through non-magnetic wall 15 while the magnetic lines of force that are emitted from the N-pole of the magnet 17 return to the S pole of the magnet 17. Also, side frame 61 appears to be made of non-magnetic material, which also does not affect the movement of the magnet 17. Furthermore, it appears that the upper side of the magnet is magnetized as an N-pole and that the lower side of the magnet 17 is magnetized as an S-pole and cannot function in the claimed high-frequency, low-frequency manner (see Exhibit 3 below).

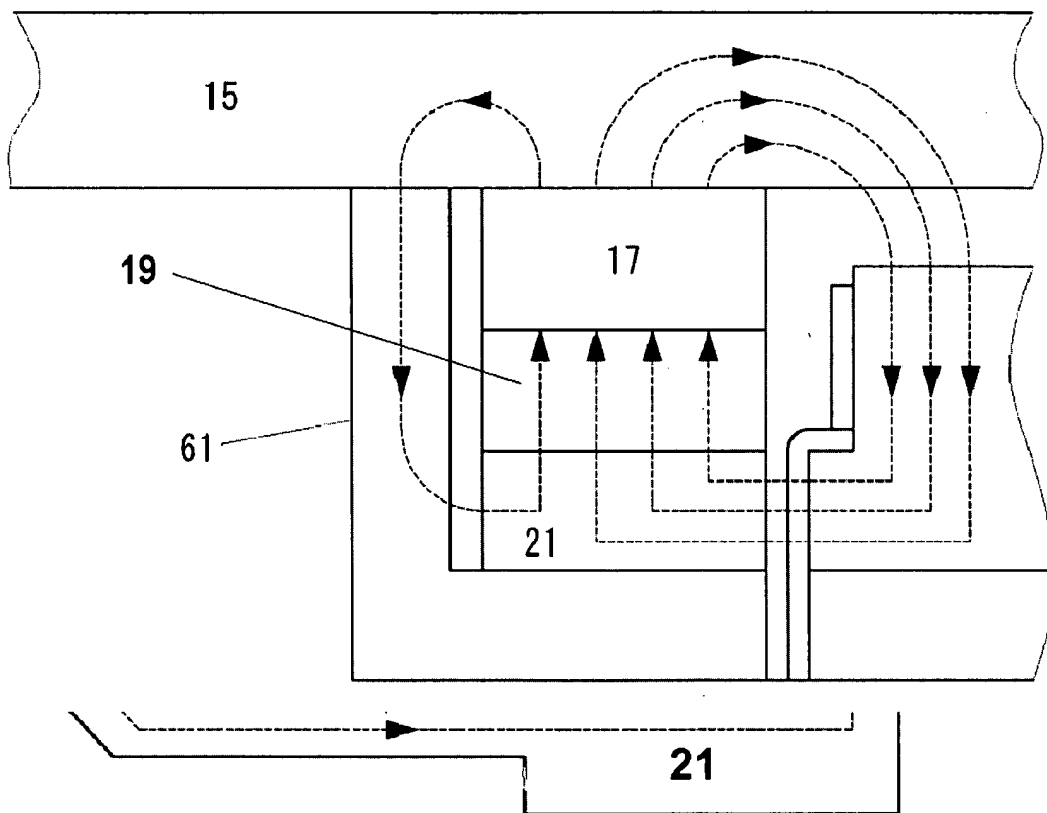


Exhibit 3: Expanded View of FIG. 2 of Donahoe showing wall 15, permanent magnet 17, flexible spacer 19, yoke 21 and frame side 61

On the other hand, in the present invention, as the center of (magnetic) magnet yoke 21 is raised, the magnetic circuit of claims 1 and 2 is formed. Therefore, the magnetic lines of force pass through the magnet yoke 21 while the magnetic lines of force that are emitted from the N-pole of magnet 20 returns in the S-pole of magnet 20 once again. The distribution state of the magnetic lines of force of magnet 20 is shown below in Exhibit 4.

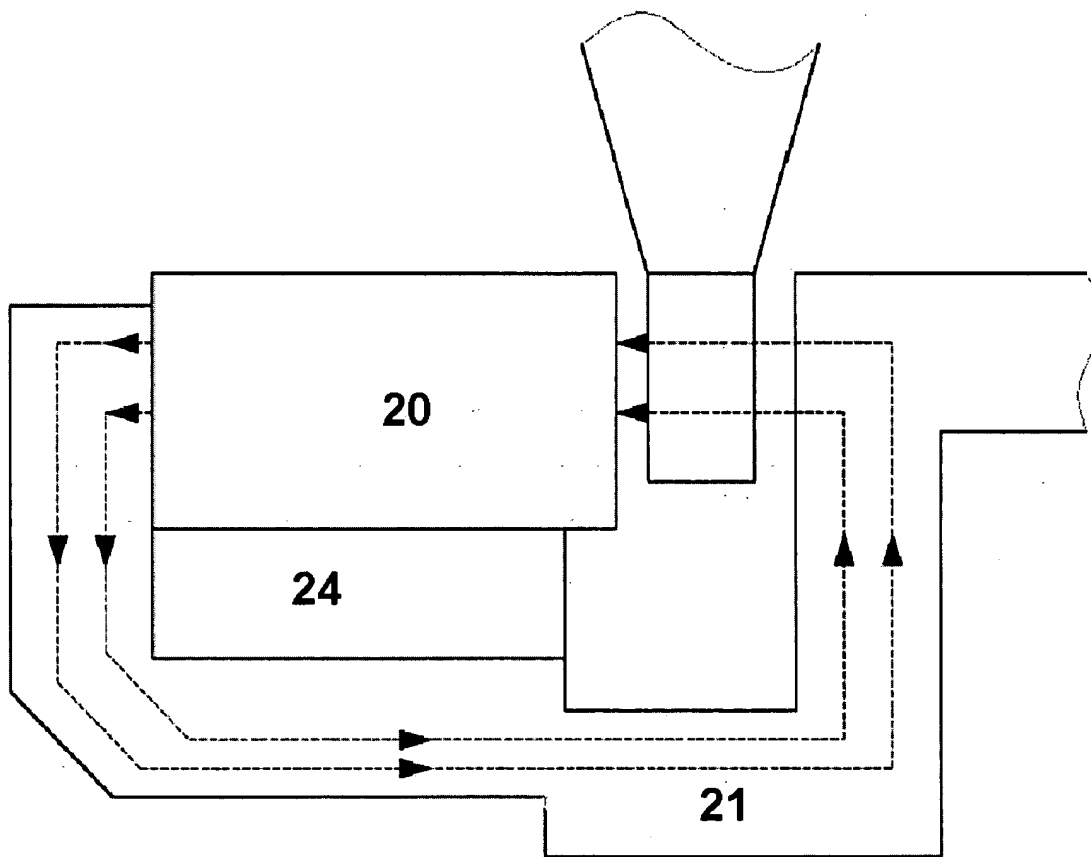


Exhibit 4: Expanded View of FIG. 1 of the Present Invention showing a magnet 20 that forms a magnetic circuit between its poles across a magnetic gap with a magnet yoke 21 (and spacer 24)

For the reasons stated above, the Applicants respectfully submit that Saito, Shimakawa and Donahoe do not teach or suggest a magnet that forms a magnetic

circuit between its poles across a magnetic gap with a magnet yoke, a diaphragm that vibrates by magnetic action when a high-frequency current is applied and a vibration plate that vibrates by magnetic action when a low-frequency current is applied, and that the magnet yoke is assembled with a spacer between the magnet yoke and the magnet. Since Saito, Shimakawa and Donahoe do not teach or suggest all the claim limitations, a *prima facie* case of obviousness cannot be maintained.

Furthermore, there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify Saito, Shimakawa and Donahoe or to combine reference teachings to achieve the claimed invention. The Official Action asserts that it would have been obvious "to one having ordinary skill in the art at the time the invention was made to include a spacer in Saito, as modified, for the purpose of accommodating expansion" (page 4, Paper No. 21). The Applicants respectfully disagree and traverse the above assertions in the Official Action.

As noted above, if one were to incorporate the spacer of Donahoe into Saito, Saito would no longer function such that a diaphragm vibrates by magnetic action when a high-frequency current is applied and a vibration plate vibrates by magnetic action when a low-frequency current is applied. Nothing in the prior art teaches or suggests why one of ordinary skill in the art would be motivated to insert the resilient and highly flexible spacer 19 of Donahoe in between the magnet 28 and yoke 29 of Saito or in between the magnet 19 and yoke 18 of Shimakawa.

Even assuming motivation could be found, the Official Action has not given any indication that one with ordinary skill in the art at the time of the invention would have had a reasonable expectation of success when combining Saito, Shimakawa and Donahoe. Nothing in the prior art teaches or suggests that the flexible spacer of Donahoe could function in the specific manner disclosed in independent claim 1.

The Applicants further contend that even assuming, *arguendo*, that the combination of Saito, Shimakawa and Donahoe is proper, there is a lack of suggestion

as to why a skilled artisan would use the proposed modifications to achieve the unobvious advantages first recognized by the Applicants. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.

In the present application, it is respectfully submitted that the prior art of record, alone or in combination, does not expressly or impliedly suggest the claimed invention and the Official Action has not presented a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.

For the reasons stated above, the Official Action has not formed a proper *prima facie* case of obviousness. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,

Eric J. Robinson
Reg. No. 38,285

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PTO/SB/21 (08-00)

**TRANSMITTAL
FORM**

(to be used for all correspondence after initial filing)

TRANSMITTAL FORM (to be used for all correspondence after initial filing)	Application Number	09/601,319
	Filing Date	October 23, 2000
	First Named Inventor	Tsuneo KYOUNO et al.
	Group Art Unit	2832
	Examiner Name	L. Donovan
Total Number of Pages in This Submission	Attorney Docket Number	0675-30

ENCLOSURES (check all that apply)

<input checked="" type="checkbox"/> Fee Transmittal Form <input checked="" type="checkbox"/> Fee Attached <input checked="" type="checkbox"/> Amendment / Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input checked="" type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts/Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Assignment Papers (for an Application) <input type="checkbox"/> Drawing(s) <input type="checkbox"/> Declaration and Power of Attorney <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____	<input type="checkbox"/> After Allowance Communication to Group <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input checked="" type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input type="checkbox"/> Other Enclosures 1. 2. 3. 4. 5. 6.
Remarks <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees required or credit any overpayments to Deposit Account No. 50-2280 for the above identified docket number.		

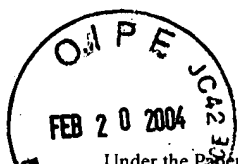
SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	Eric J. Robinson, Reg. No. 38,285 Robinson Intellectual Property Law Office, P.C. PMB 955 21010 Southbank Street Potomac Falls, VA 20165
Signature	
Date	February 19, 2004

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Effective 10/01/2003. Patent fees are subject to annual revision.

☐ Applicant Claims small entity status. See 37 CFR 1.27.**TOTAL AMOUNT OF PAYMENT** (\$) 1280.00**Complete if Known**

Application Number	09/601,319
Filing Date	October 23, 2000
First Named Inventor	Tsuneo KYOUNO et al.
Examiner Name	L. Donovan
Group Art Unit	2832
Attorney Docket No.	0675-30

METHOD OF PAYMENT

- 1.
- ☐
- The Commissioner is hereby authorized to charge indicated fees and credit any overpayments to:

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Number

50-2280

Deposit
Account
NameRobinson Intellectual Property
Law Office

- ☒
- Charge Any Additional Fee Required
-
- Under 37 CFR 1.16 and 1.17 and
-
- credit overpayments

- ☐
- Applicant claims small entity status.
-
- See 37 CFR 1.27

- 2.
- ☒
- Payment Enclosed:**

- ☒
- Check
- ☐
- Credit Card
- ☐
- Money
-
- Order
- ☐
- Other

FEE CALCULATION**1. BASIC FILING FEE**

Large Entity Fee Code	Fee (\$)	Small Entity Fee Code	Fee (\$)	Fee Description	Fee Paid
1001	770	2001	385	Utility filing fee	
1002	340	2002	170	Design filing fee	
1003	530	2003	265	Plant filing fee	
1004	770	2004	385	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	

SUBTOTAL (1) (\$)**2. EXTRA CLAIM FEES**

Total Claims	Extra Claims	Fee from below	Fee Paid
	-20** =	\$18	
Independent Claims	-3** =	\$86	
Multiple Dependent			

Large Entity Fee Code	Fee (\$)	Small Entity Fee Code	Fee (\$)	Fee Description
1202	18	2202	9	Claims in excess of 20
1201	86	2201	43	Independent claims in excess of 3
1203	290	2203	145	Multiple dependent claim, if not paid
1204	86	2204	43	** Reissue independent claims over original patent
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) (\$)

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)**3. ADDITIONAL FEES**

Fee Code	Large Entity Fee (\$)	Small Entity Fee Code	Small Entity Fee (\$)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for <i>ex parte</i> reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	420	2252	210	Extension for reply within second month	
1253	950	2253	465	Extension for reply within third month	\$950.00
1254	1,480	2254	740	Extension for reply within fourth month	
1255	2,010	2255	1005	Extension for reply within fifth month	\$330.00
1401	330	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	
1403	290	2403	145	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,330	2453	665	Petition to revive - unintentional	
1501	1,330	2501	665	Utility issue fee (or reissue)	
1502	480	2502	240	Design issue fee	
1503	640	2503	320	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	770	2809	385	Filing a submission after final rejection (37 CFR § 1.129(a))	
1810	770	2810	385	For each additional invention to be examined (37 CFR § 1.29(b))	
1801	770	2801	385	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	
Other fee (specify) <u>Terminal Disclaimer</u>					

* Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$) 1280.00**CERTIFICATE OF MAILING**

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SUBMITTED BY

Name (Print/Type) Eric J. Robinson

Signature

Registration No. 38,285
(Attorney/Agent)**Complete (if applicable)**

Telephone (571) 434-6789

Date February 19, 2004